Germane Issues and Physiognomies of Bank Liquidity Risk

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Abstract

The complexity of liquidity risk in nature makes its precise definition a very cumbersome task. Though, it is the lifeblood of any organization it has not been given attention until recent. The given attention by the stakeholders does not commensurate with its importance. Indeed, the survival of a banking institution as well as the success of the whole financial system depends on availability of liquidity and ability to understand the rudiment of its risk for proper mitigation. This paper makes a bold attempt to shed more light on important issues related to liquidity risk and also examines some of its important features.

Keywords: liquidity, liquidity risk, banking institution, financial system

1.0 Introduction

Risk, an exposure to a chance of loss is naturally inherent in every sphere of life, be it social or economic, individual or corporation. Banking institutions are no exceptions (Greuning & Bratanovic, 2003). In the financial institutions' parlance, risk is a common phenomenon. It is inherently present in all the financial transactions, particularly banking activities. Although, banks, in their banking operations are exposed to many risks, unlike in the recent past, the attentions of the banks' management, policy makers and the regulators are currently focused on liquidity risk

Giving liquidity risk a specific definition is a herculean task due to the fact that it is a complex subject. Quite a number of studies agreed that it is easier to identify symptoms and

the causes of liquidity risk than defining it. To enhance the knowledge of the subject matter there is need to examine some related issues and relevant features.

The fundamental maturities transformation function of banking institutions involves obtaining funding from short-term deposits to finance loans at a relatively long-term. This and other operations of banking institutions are indeed very risky. As the financial intermediation function exposes banks to the risk of the demand for repayments by depositors usually beyond the financial institution's capacity to transform assets into cash (Miguel et al., 2006). However, banks are expected to have ability to assess maturity profiles of their assets and liabilities together with the associated returns and risks (ECB, 2002). This is believed will afford them the opportunity to determine the type and amount of liquid assets they can hold to meet the desired and required threshold for maturity mismatch.

There are six sections in this paper with section one introducing the subject matter of the paper. Section two examines the nature and characteristics of liquidity risk, section three discusses assets and liabilities as the cause of mismatch with respect to the resultant liquidity risk. Section four examines the relationship among investment, liquidity risk and banking crisis. Section five looks into the regulation and supervision of bank liquidity while the last section six concludes the paper.

2 Nature and Characteristics of Liquidity Risk

The common understanding of banking in the literature is the capacity of the bank to meet its cash obligations when they fall due (Valla et al., 2006). But anything on the contrary induces liquidity risk. To fully comprehend the concept of liquidity risk in the banking system, it is noteworthy understanding the essence of liquidity to the banks. As explained by Durmus (2011), there are two main objectives of bank's liquidity: First, to ensure that banks can conveniently meet their expected and unexpected cash obligations at all times. Second,

contribute to the profitability of the banks. The funding sources usually employed by banks to meet these objectives, significantly depends on their business mix, balance-sheet structure, and the cash flow profiles (Greuning & Bratanovic, 2003). Banks in the course of managing their cash-flows usually encounter various situations such as funding mismatches, market constraints on their ability to convert assets into cash or increasing sources of funding and contingent liquidity events (Nikolaou, 2009).

Bank's inability to effectively and efficiently manage the maturity mismatch of its assets and liabilities, the unplanned changes in the funding sources or address changes in the market conditions is capable of giving rise to liquidity risk (Durmus, 2011). Liquidity risk is defined by the Office of Thrift Supervision in its 2010 examination handbook as the risk to a saving/credit institution's earning and capital that arises from its inability to meet its due obligations in a timely manner, without incurring unacceptable loss. Liquidity risk is classified by Joint Forum of Basel Committee on Banking Supervision into market liquidity risk and funding liquidity risk

2.1 Market Liquidity Risk

As discussed earlier, liquidity is a concept that describes the capacity of a financial institution to fund increase in assets, meet cash and other obligations without incurring unacceptable losses (Prassana, 2010 and Anjum, 2012). Based on the nature of banking business, banks usually invest in loans (assets) with longer maturity more than banks' borrowing (liabilities) which exposes banks to the risk that funding liquidity may dry-up (Lee, 2010). Often referred to as roll over risk, potential shortages of funding liquidity may result due to roll over of its short-term borrowing, increased demands for funds by borrowers and sudden drastic reduction in deposits (Greuning & Bratanovic, 2003 and Lee, 2010). Therefore, Durmus (2011) argued that liquidity is a vital organ of market dynamism and its

inefficiency is always the root course of market stress. Parassana (2010) noted that liquidity shortage constrains a financial institution's ability to quickly liquidate assets in the market with minimal loss in value.

However, banks' usual attempt to withhold liquid assets for the purpose of covering unexpected mismatches between cash inflow and outflow links the liquidity of individual institution to the market liquidity (Acharya et al, 2009a). Market liquidity is described by Bervas (2008) as a fundamental and integral part of financial system due to its importance as a precondition for market efficiency and its sudden absence in the market may degenerate to a systemic crisis. Level and vibrancy of market liquidity depends on the availability of adequate number of counterparties in the market and their readiness to trade (Johnson, 2007). Hence, in his view a market is said to be liquid if it is easy to trade, in the sense that buyers and sellers are readily available and at similar prices to accommodate the transaction demand. A market adjudged perfect liquid "would therefore, guarantee a single 'bid-ask' price at all times and irrespective of the quantities being traded (Bervas, 2008).

However, 'illiquidity' of the market arises when asset positions ceased to be normally traded with little bid-ask spread, but rather at a substantial discount Prassana (2010) confirmed the changing nature of the financial assets' liquidity which can be distributed to the common component in the liquidity across assets. They argued that market liquidity is a function of market depth and its continuity which are greatly influenced by two important factors namely; trading strategies and the chosen hedging methods. Furthermore, they claimed that market liquidity risk has a close relationship with the transaction size, product type, current market sentiment and the trading position. Therefore, it is logical to say that liquidity shortage condition indicate a relatively small number and size of day-to-day transactions which represents the size of portfolio trading positions that the market can absorb at a given level. Arguably, limited absorption capacity of the market leads to inability to quickly sell

securities or assets at a price in the market thereby giving rise to market liquidity risk in trading portfolios. This could happen when a crisis ridden market where only very few people show interest in buying more securities (Al-Janabi, 2009). He therefore suggested that financial institutions should give due recognition to the asset liquidity risk and its relationship with the market risk for trading positions because it is capable of increasing the loss to the overall market risk exposure.

This shows that there is a kind of interrelationship between market and liquidity risk and can have simultaneous impact on each other (Al-janabi, 2009). Sharing similar view with Al-janabi, Kolja (2006) emphasized that liquidity risk is inherent in every market and it manifests itself in every transactions involving assets/portfolios trading. He pointed out that from the bank's perspective, this could occur in three situations, viz;

1. Normal daily business activities
2. Investments, and
3. Fire-sales during times of shortage of funds.

Therefore, he suggested that every bank should have in place funding liquidity mitigation strategies, laying out precise action plan on how additional funding is to be acquired in order to prevent insolvency.

2.2 Funding Liquidity Risk

A vast number of studies hold it that though banks are structurally illiquid due to the nature of their business, but liquidity shortage is a financial element that always manifests during major financial crisis. In the general sense, financial crisis refers to a period of huge depreciation in market prices and scarcity of liquidity in the financial markets (Lee, 2010). Also, whenever, there is financial crisis, market experiences massive capital outflows which if no more or at least equal inflows, depletes the available liquidity and it may be a more

difficult task for banks to raise funds in the interbank market (FSC, 2010 and Lee, 2010). The general consensus of literature on banking system and financial stability is that interbank lending market is a crucial factor for banks experiencing funding constraints in their liquidity requirements. Lee (2010) believe that the ability of a bank to borrow either in interbank market or elsewhere can be reduced by funding constraints which if persists may lead to decline in stock prices and eventually a financial crisis. Therefore, banks as providers of liquidity in the economy have to properly and efficiently manage their cash outflows (assets) and cash inflows (liabilities) in order to ensure availability of sufficient liquidity at all times. In a nutshell, funding constraints plays a crucial role in the genesis and spread of financial crisis (Durmus, 2011).

The core business of banking institutions has always been and still remains liquidity production (Negret, 2009). That is the traditional financial intermediation of banking system through mobilization of short-term deposit to fund long-term loans involves production of funding liquidity. For instance, a depositor's cash withdrawal or a firm's borrowing through a credit line from a bank; the issuing bank has by the way provided funding liquidity for the customers. In that sense, negative impact of financial intermediation is as a result of funding liquidity constraints (Johnson, 2007). Funding liquidity risk therefore, relates to the inability of a financial intermediary to service its financial obligations when they fall due at a reasonable cost (Praet & Herzberg, 2008). It is intrinsically relevant, particularly to the commercial banks whose major business is funding illiquid loans through liquid deposits (Lee, 2010).

Negret (2009) viewed funding liquidity risk as an ubiquitous risk of the financial system. By the nature of its business, a bank is subject to liquidity risk as it assumes the possibility of funding liquidity risk as a result of maturity mismatches of its assets and liability (Brehmann & Nilolaou, 2009). A bank's funding liquidity problems, if not immediately addressed can

quickly turn to insolvency, especially if the illiquid bank is forced to sell its assets at fire-sale prices in order to raise cash, thereby, reducing its capital (Negret, 2009). Lee (2010) argued that funding liquidity risk is systemic in nature because of balance sheet interconnections among banks. For instance, a liquidity stricken bank which tries to raise loans from other banks in the interbank money market tends to spread its liquidity problems throughout the financial system.

Generally, the degree of funding liquidity risk is influenced by the availability of the four major liquidity sources (Nikolaou, 2009). These sources are as follows;

1. Short-term (liquid) deposit: Banks gets funding liquidity through money entrusted to them by depositors which is considered in literature as the most stable source of funding liquidity.
2. The market: Banks can always sell their assets in the market to generate liquidity and can as well generate it through securitization, loan syndication and loans from secondary markets
3. Interbank market: A bank can source for liquidity from the interbank money market which is believed to be an important source of liquidity.
4. The Central Bank: A bank can directly source for liquidity from the Central bank, making use of Central Bank's facilities of Lender of Last Resort.

In addition, the ability of a bank to satisfy the budget constraints over the respective time horizon also have great influence on the level of funding liquidity risk (Nikolaou, 2009).

Nevertheless, traditionally, banks' primary sources of funding has always been short-term, stable and low cost demand, saving and time deposits. In contrast, these are used to generate rather, illiquid loans which expose banks to fundamental risk. Notwithstanding, Negret (2009) argued that banks in normal circumstance could be liquid as long as long as liquid asset are more or at least equal to more volatile liquid liabilities. However, the trend in

banking operations shows that there is tendency of banks' greater reliance on wholesale markets source of funding and a reduction in liquid asset ratios (Lee, 2010). In other words, instead of banks sourcing for liquidity through retail deposit, they tend to increasingly rely on the interbank borrowing, short and long term debts (i.e. securitized or collateralized funding), or sales of marketable securities (Negret, 2009). This, he believes has the tendency of raising funding liquidity risk especially when banks' wholesale funding is keenly concentrated at shorter maturities which requires regular financing. However, the general assumption of numerous studies is that issuance of long-term notes, asset-backed securities (ABS) or covered bonds to match the associated assets maturity could be a way of reducing banks' liquidity susceptibilities/ exposures.

This is a clear indication that there is a linkage between market liquidity risk and funding liquidity risk. It is an attestation in support of the studies by Brunnemeir and Pederson (2007) and Drehamann and Nikolaou (2008) which respectively rationalized and validated linkage between market liquidity and funding liquidity risk.

No doubt, liquidity concept is very critical to the banking operations whether when the economy is booming and liquidity risk is low (normal periods) or under stress when the liquidity risk is very high (turbulent periods). Liquidity is believed to have two major components, viz; source of funds and application of funds (ORACLE, 2009). In other words liquidity is made up of market liquidity and funding liquidity. Negret (2009) demonstrate a clear and strong linkages and dynamic dependencies between market and funding liquidity. The linkage is illustrated by the Figure 1 below

4
1 3

2
5

Figure 1: The relationship between funding liquidity and market liquidity
Source: Negret (2009)

With illustration shown in the diagram above, he illustrated how endeavor to sell significant amount of assets that are less liquid may trigger market illiquidity (indicated by arrow 1), thereby incapacitating the financial institution from raising the originally planned amount. Also, he shows how funding needs can arise from illiquidity of the market (this is illustrated by channel 2), most especially when it is impracticable for an institution to securitize or syndicate loans. This idea is overwhelmingly supported by Caruana and Kodres (2008) with the argument that the recent global crisis clearly indicated that market illiquidity can quickly turn into funding illiquidity. They argued that the use of alternative assumptions about the liquidity of particular assets can have significant implication for bank's funding plan.

Furthermore, general market liquidity risk can be reduced by the attempt of the institution to sell assets, an action which is contagious and capable of subjecting other institution to liquidity pressure (Negret, 2009). He argued that other institutions can be exposed to earnings and capital pressures by 'fire sales' induced fall in market prices. This is illustrated by channel 3 whereby these other institutions are in need of their own liquidity and effort to meet their funding needs their asset sales creates a potential feedback loop to market illiquidity (as shown by channel 4). The channel 5 shows that the action of these institutions that suffer large liquidity shortfalls and seek to close out their lending positions, particularly in the interbank money market create direct funding liquidity needs for other market participants (Negret, 2009). Therefore, it can be inferred that market liquidity risk and funding liquidity risk are interrelated and can simultaneously have impact on each other (Al-Janabi, 2009)

3. Asset and Liability Mismatch (liquidity gap) and Liquidity Risk

Bank's efficiency and performance strictly depends on the banks' ability to balance its quest for profit maximization and ensuring its liquidity with the minimum risk. Successful performance of a bank is to some extent determined by its prudently selected asset and liability management strategy, especially paying special attention to the loan portfolio (Bervas, 2008). As a profit oriented firm, bank in order to ensure maximized profit, must maximize the volume of long-term loans and at the same time maintains the required liquidity. This requires a proper asset and liability maturity management which plays a critical role in planning and merging different business lines in a financial institution. In fact, mismatch of assets and liabilities across various business lines can be used in identifying potential liquidity risks and analyzing the impact of maturity transformation on the financial institution's liquidity (Katalysys, 2011)

Maturity mismatches of assets and liabilities (liquidity gap) often result in liquidity risk of any financial institution and such liquidity shortages make banks to be susceptible to market liquidity risk (FIGB, 2007and Bessis, 2002). Bessis (2002) explained that when liabilities exceed assets, it shows that there are excess funds available to the banks and such excesses, due to the uncertainty in the revenues from the investments of these excess assets, generate interest rate risk. The higher the maturity of the loan or deposit, the higher will be the offered interest rate (FIGB, 2007). On the other way round, whenever banks' assets are greater than liabilities, liquidity deficit always manifests and invariably induces deficit in market liquidity. That is the banks available resources are not sufficient to fund the banks' long-term commitments. This demands immediate funding from the market.

He explained further, that this situation/scenario exposes the banks to two risks; the risk of not being able to raise the required liquid on the market, and the risk of paying higher costs in order to meet the liquidity requirement. Burucs (2008) agreed that liquidity risk in a financial

institution can arise from many sources, but maintained that asset or liability related liquidity risk can emanate from the following sources listed in the table below.

Table 1: Asset and Liability Sources of Liquidity Risk

Asset-related	Liability-related
1. Insufficient availability of collateral 2. Disruption in payment settlement system 3. Increased collateral requirements due to markets risk losses, ratings triggers or asymmetric documentation 4. Inadequacy of a firm's infrastructure to conduct securitization transaction 5. Reduced liquidity of outright market for securities 6. Too large a trading position relative to market volume, open interest, and number of market makers 7. Failure of specialist liquidity providers in niche security markets 8. Unwillingness of counterparties to the settlement risk on collateral transfer across time zones 9. Spurious diversification, while portfolios might be diversified strategies may be correlated across counterparties 10. Lack of demonstrable liquidity due to bespoke nature of transaction	1. Accelerated withdrawal of relationship- based and transactional deposit from banks and dealers 2. Lack of competitive deposit strategy and products 3. More rapid loan than deposit 4. Loss of access to unsecured wholesale funding or extreme increase in cost 5. Materials dependence on wholesale short-and long-term unsecured funding, including from higher-rated counterparties 6. Failure of providers of unsecured funds 7. Concentration of wholesale funding sources 8. Reduction in the availability of money market lines available to the bank 9. Reduced ability to raise term money 10. Reliance on credit dependent sources of secured funding, correspondingly, availability of committed irrevocable secured funding lines 11. Restricted access to secured funding markets 12. Reliance on synthetic funding from better-rated counterparties 13. Technology risk related to funding 14. Rating downgrade

Source: Burucs, 2008

The issue of liquidity gap is viewed in an alternative way by Rose and Hudgins (2002). They looked at it from the point of differences in the average maturity dates of the assets and liabilities. They argued that matching maturities of all assets and liabilities indicates zero difference in their maturity dates, but the average maturity dates will differ if there is a time

mismatch. Bessis (2002) claimed that "the average maturity date calculation weighs the maturity with the book values of outstanding balances of assets and liabilities." Inability of bank to service its liabilities as a result of even slightest liquidity mismatch for at least a few hours can cause a run on the bank. The consequent liquidity risk may lead to the liquidation of even a solvent bank. Therefore, FIGB (2007) suggests banks' liquidity risk management strategy that will aim at elimination of the risk and mitigate the liquidity mismatch (gap). However, based on the FIGB (2007) belief that liquidity gap cannot be completely eliminated in banking operation but can only be reduced, Rose and Hudguis (2010) in effort to mitigate the problem of maturity mismatching suggests the following steps that banks are expected to follow:

- Measure expected daily gross flows,
- Monitor intraday liquidity positions against expected activities,
- Acquire sufficient intraday funding,
- Mobilize the collateral as necessary,
- Manage the timing liquidity outflows, and
- Deal with unexpected disruption.

However, ORACLE (2011) argued that managing assets and liabilities as well as liquidity risk are very critical for the smooth operation and existence of a financial institution and sustenance of its operation. Hence, FIGB (2007) agreed that liquidity can be managed by adopting the following strategies:

- Holding liquid investments.
- Keeping open dependable lines of credit.
- Maintaining a presence in the interbank market by regular borrowing and lending.

- Maintaining credibility and good reputation with depositors/lenders to ensure that matured liabilities are promptly renewed.

4. Investments, Banking Crisis and Liquidity Risk

The recent studies' discovery of lack of liquidity as the main killer of organizations and liquidity risk as the major business concern is giving business organization serious sleepless nights. Its importance is demonstrated by the regulators' introduction of tighter regulations for liquidity management and investors' closer scrutiny of the investment portfolios (Korea Institute of Finance, 2010). In fact, Johnson (2007) sees it as very important for the policy makers as well as investors to understand liquidity dynamics because it is of paramount importance and greater necessity for the implementation of a dynamic portfolio strategy. Lawrence (2006) observed that corporate investment decisions are affected by financial constraints especially when the institution faces either imperfect or incomplete financial markets whereby the cost of internal capital is far below the cost of external capital.

Pastor and Strambaugh (2003) agreed with the views of recent studies that liquidity plays a prominent role in the investment environment and macro economy and that fluctuation/volatility in various measures of liquidity are correlated across assets. Cash inflows volatility, a resultant effect of assets and liabilities mismatch can be used to identify liquidity risk and its impact on the investment levels and as well serve as a guide to set internal limits and assist in liquidity pricing (Kalalysys, 2011). Joao (2001) predicted that during a particular period, a firm's cash flow volatility will be negatively associated with its average discretionary investment measured over the same period. In other words, the volatility portends the likelihood that the firm experiences cash flow shortfalls and ultimately forgoes investment opportunities.

However, Pastor and Stambaugh (2003) argued that it makes sense for investors to require higher expected returns on assets whose returns have higher sensitivities to aggregate liquidity. This is in line with finding of Lawrence (2006) that assets having higher sensitivity to innovations in aggregate liquidity have higher expected returns.

Similarly, Acharya et al. (2009b) find that banking assets are highly sensitive to macroeconomic shocks. Banks, because they are limited liability entities have affinity for risky assets, regardless the fact that cash flows of risky assets are illiquid and their pledgeability is limited (Acharya, 2009b). He argued that banks are induced to hold liquid assets in their portfolio due to the risky assets 'cash flows" limited pledgeability and the potential for future acquisitions at fire-sale price. However, it is further argued that in an adverse state of the markets, assets prices can plunge below their original value, thereby giving rise to fire-sale pricing. Meanwhile it is only the banks that are able to survive the adverse situation and possess enough liquidity that stand the chance of making windfall profits from purchasing assets at fire-sale prices. Pastor and Stambaugh (2003) suggest that if banks hold assets that have higher liquidity sensitivity it might lead to the likely occurrence of liquidation when the liquidity is low. Therefore, Acharya et al. (2009a) believed that the expected profit from risky assets when the economy is on the upswing are very high as well as their pledgeability.

Pastor and Stambaugh (2003) found out that assets having more volatile liquidity attract lower expected returns which expose banks to liquidity problems and eventual failure. Banks' choice of liquidity is usually affected by the intervention policies aimed at resolving bank failures (Acharya et al., 2009b). The three different policies considered by Acharya et al. (2009b) are as follows;

i. Liquidity support to failed banks.
ii. Unconditional liquidity support to surviving banks.

iii. Liquidity support to surviving banks conditional on the level of liquid assets in their portfolios.

They proved that the first policy tends to limit re-sale opportunities and the second one provides guarantee to the surviving banks' desired liquidity for acquisition at re-sale prices. Both policies have tendency to discourage banks from holding liquidity. On the other hand, they confirmed that the third policy increases banks' incentives to hold liquidity. Acharya et al. (2009a &2009b) agreed that liquid assets have lower returns than illiquid assets. They suggest that banks should solve a portfolio choice problem and maximize their profits through prudent consideration on how much to invest in risky assets and its timing. The Office of Thrift Supervision agreed that managing the timing and maturity of assets appropriately as well as prudent management of liability cash flows coupled with effective regulations can enhance liquidity and as well prevent bank failures.

5. Regulations and Supervision of Bank Liquidity

Considering the important role banks play in financial intermediation and the fact that liquidity is not only crucial to the viability of a banking organization, but to the whole financial system one will undoubtedly agree that regulation of the liquidity risk of a bank is necessary and cannot be compromised. Due to contagion effects, liquidity shortages of a financial institution can have systemic repercussions causing instability of the financial system (James et al., 2001).

Effective regulations and supervision of financial institutions can help a lot to mitigate inherent financial risks in banking operations (Ewerhart & Valla, 2008). ECB (2002) stressed that regulation, in the form of regulatory liquidity ratios, deposit insurance scheme, tax and reinvestment rules, and minimum reserve requirements plays an important role in the liquidity features of a banking system. Supervision on the other hand can be in the form of

interbank peer/ official-monitoring strategies or centralized supervision. The importance of the role of regulation and supervision can be much felt most especially, in turbulent times when vicious circle is created between funding and market liquidity which has potentiality of leading to systemic failures within the financial system (Nikolaou, 2009). Efficient supervision involves development of liquidity policy/regime which may be based on a combination of system and control requirements and a quantitative regulatory framework (Joao, 2001). Joao explained that the system and control section stipulates the standard for the identification, measurement, monitoring and control of liquidity risk with specific aspects which inter alia include the responsibilities of a firm's governing body and senior management, setting of limits and requirements (such as need for firms to perform stress scenario testing and putting in place sound contingency funding plan). While the purpose of the qualitative section is to design a single liquidity risk framework for financial institutions which will set out the quantity or extent of liquidity risk that an institution may incur (ECB, 2002). Furthermore, it explained that the designed framework is also meant to take account of firms' different roles in the liquidity provision to the other part of the financial system.

However, Nikolaou noted that effective regulation is desirable because it will safeguard and support the implementation as well as fostering the effectiveness of supervision. Miguel et al. (2006) recommended that efficient supervision has to do with evaluation of a bank's strategies, policies, procedures and practices related to the management of liquidity. All these they suggested should be conducted independently. Nikolaou (2009) argued that a combination of effective regulation and efficient supervision is capable of enhancing new financial products' development with intent to enlarge the pool of assets for various risk appetites and help to complete markets. In other words, they can directly mitigate the causes of the liquidity problem. To be able to achieve these feats, ECB (2002) suggests that banks' supervisors should on continuous basis monitor the banks' liquidity position both on an

individual and on group-wide basis and an appropriate limit for the liquidity target should be defined, putting the overall situation of the institution into consideration. If effective regulation and efficient supervision that can act against causes of liquidity problems could be achieved and guaranteed in banking institutions, definitely, the role of Central bank's liquidity as a first buffer for problems caused by liquidity shortfalls would have its importance reduced, if not rendered redundant. In that sense, the relevance and efficiency of central bank liquidity will depend on quality of regulation and supervision in the financial system.

This view seems to corroborate the position of Goodfriend and King (1989) that peer-monitoring of institutions can unofficially impose market discipline in the system. They suggest that "deregulated markets can successfully discipline themselves through their financial instruments and practices in order to provide a well-functioning market. This view is also shared by Goodhart (2008) who favoured collateralized inter-bank lending and increased banks' responsibility by transferring costs of failures to the originating banks. Nevertheless, Nikolaou (2009) argued that implementation of efficient supervision and effective regulation is very importance and cannot be trivialized. Likewise, some other authors are in support of establishment of official regulation and supervision. Their argument is that centralizing regulation and supervision in the hand of central bank will enhance transparency and make it easier to differentiate between illiquid and insolvent institution, thereby reducing the costs of central bank's intervention. The financial system would be insulated against early stage coordination failures and consequently, leads to elimination of systemic liquidity risk (Brehmann and Nikolaou, 2009).

6. Conclusion

This paper establishes the fact that risk is inherent in the financial system as banks are subjected to a variety of risks, including liquidity risk while performing their functions as financial intermediaries. Liquidity problems been the bane of the recent global financial crunch, the general concept and definitions of liquidity and liquidity risks, their importance as well as consequences if left unmanaged are given due attention and thoroughly discussed. Two types of banks related liquidity (i.e. market liquidity and funding liquidity) and liquidity risks (market liquidity risk and funding liquidity risk) are also identified and discussed as well.

Probing into the banking risks led to the discussion on the sources of liquidity risk in the banking system as well as the nature and characteristics of liquidity risk. Also thrashed out are important issues such as the asset and liability mismatch (liquidity gap) and its relationship with liquidity risk with distinction made between asset related liquidity risk and liability related liquidity risk. The paper also deliberated on issues that involve relationship among banks' investments, banking crisis and liquidity risk. Due to the havoc liquidity risk is capable of wrecking to the stability of the financial system, this paper believes the role of effective regulation and supervision in mitigating the liquidity risk cannot be overemphasized.

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